

ROYAL COMMISSION
ON
AGRICULTURE IN INDIA

INTRODUCTION
TO
VOLUME V

EVIDENCE
TAKEN IN THE
ASSAM



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ASSAM.

1. GENERAL FEATURES.

The Province of Assam, ceded to the British by the Burmese in 1876, was administered as part of Bengal until 1874 when it was formed into a separate province under a Chief Commissioner. It was merged into Eastern Bengal in 1905 but again became a separate province in 1912. Including the area occupied by the hill tribes under the political surveillance of its Government, it covers some 77,000 square miles. The area under regular administration is about 53,000 square miles; thus the territory to which this introduction refers is nearly as large as England and Wales. The present population is about 8,500,000. The inhabitants are very unequally distributed; the density of the population in some tracts may be as much as 500, in others there are no more than 7 persons to the square mile. About eighty-eight per cent of the people are dependent on agriculture, and there are only six towns with more than 10,000 inhabitants, of which the largest is Shillong with a population of about 17,000.

Roughly conical in outline, its northern base bedded on the Himalayan mountains which rise steeply and to great heights above the broad valley of the Brahmaputra, its southern apex the Lushai Hills, wedged between the Chittagong hills of Bengal and the Chin hills of Burma, the Province of Assam, though the smallest in cultivated area and in population among the major provinces of India, may claim to rival any of them in interest. It includes within its borders a variety of peoples and languages, and a wealth of natural gifts that make an immediate appeal to the traveller, and dispose him to accept, despite the objections of philologists, the conventional derivation of the name of the province from the Sanskrit *asama* or 'peerless'.

Whence come the people of Assam? Its large immigrant population makes this a sufficiently complicated subject for modern census commissioners to unravel. Whence they came in the far distant past, none can say. Immigration into its fertile valleys is much older than history. The earliest people to whom legend permits the use of the term "immigrant" were Aryan priests and warriors; and they found, settled along the banks of the Brahmaputra, tribes of Mongolian affinity, and in the Surma Valley people of Dravidian type. Here, in this north-eastern corner of India, centuries before any written records were made, three of the world's great races met and fused. When, in the seventh century of the Christian era, a Chinese traveller first provides a description of the people, he tells of a small but sturdy dark yellow race, fierce of countenance, but upright and—be it noted—studious, learning the tenets of a new religion from the Brahmins. In the centuries that followed, Koch kings from the west, Ahoms from the east, Muhammedans from the south and Himalayan hill

men from the north struggled for the possession of these fertile valleys. The broad alluvial plains of the Brahmaputra and Surma preserve ruined records of these struggles. The character and customs of the people themselves disclose their diverse origin. But yet throughout these troubled centuries there existed human sanctuaries within Assam. The thick jungles of the lower hills repelled invaders, and in the uplands there dwelt apart tribes who have preserved their purity of race and have retained their ancient languages and customs. To the Sema Nagas, who visited Jorhat so that their food difficulties might be explained to the Commission, the seventh century description of the Chinese traveller could have been applied with little need for modification. They had not embraced the Hindu religion but, otherwise, they were, as were their predecessors thirteen centuries before, small of stature, sturdy, dark yellow skinned and fierce of countenance. They gave no indications of being studious (indeed schools were regarded by them as somewhat of an infliction) but they were certainly intelligent. To the ethnologist Assam offers a field of enquiry unequalled elsewhere in India, and it is a fortunate circumstance that the province has found competent students of this subject. The daily programme of a Royal Commission, though it offers no opportunity for independent study of the peoples met with, permits some realisation of the opportunities that exist for others, just as it permits glimpses of the wonderful natural setting in which these types of mankind have been evolved. And this natural setting may occupy our attention for a moment, for the agriculture of Assam is everywhere conditioned by the physical features of the country.

The province is entered from the north-west by the Eastern Bengal Railway. The line traverses the administrative districts of Goalpara and Kamrup which are bounded on the north by the Himalayan State of Bhutan and on the south by the Brahmaputra. These two districts occupy a wide alluvial plain intersected by rivers of large size which, debouching from the mountains and crossing the plain, lose themselves in the giant Brahmaputra. But the Eastern Bengal Railway follows an artificial avenue; the natural gateway to Assam is reached on the Brahmaputra. No Indian province, not the western presidency with its Bombay harbour, modern sea gateway to India, not the North-West Frontier Province, with its rugged Khyber, ancient land gateway to the plains of Hindustan, can raise higher anticipations in the traveller approaching it for the first time than does Assam when entered by the river gateway by which its former capital of Gauhati and its present capital of Shillong are reached. The visitor, who quits the railway to cross the Brahmaputra while the sun struggles for supremacy with the mists on the river, and sets his course for the blue Khasi Hills, serrated in outline and rising tier upon tier above the river's southern bank, enters this province by a gateway that compels expectation. Nor is he disappointed. Assam cannot, and does not, boast of its road system, but few roads can traverse so varied a country as does the road which the traveller may now follow southwards for 100 miles. From the Brahmaputra plain it rises to over 5,000 feet; from its start

near Gauhati, with a rainfall of between 60 to 70 inches, it leads to Cherrapunji, where falls varying from 350 to 900 inches have been recorded. The alluvium of the valley is soon exchanged for the rugged gneiss of the hill sides, and when the hill is climbed, the highway for many miles traverses a changing upland country showing harsh metamorphosed sandstones, castellated trap rocks, rich, easily weathered limestones and surface seams of coal, each of which confers characteristic features on the landscape and vegetation.

2. NATURAL DIVISIONS.

This Gauhati-Cherrapunji road may conveniently form the starting point for a reference to the natural divisions of Assam, for it begins in the Brahmaputra Valley, one great natural division; in its course, it traverses a district typical of the many hill tracts of the province, and it terminates on the edge of an escarpment, from which one may see, 4,000 feet below, the great Surma Valley, which stretches for miles in a north-easterly and south-westerly direction and forms the third of the great natural divisions of Assam. The valley of the Brahmaputra is an alluvial plain running roughly east and west for a distance of 450 miles, and covering an area of nearly 25,000 square miles. On the north, it is shut in by the Himalayas and, on the south, by the elevated plateau known as the Assam Range. In general, the valley is about fifty miles broad, but, here and there, spurs from the Assam Range run right down to the river, and about the centre of the valley there is the isolated block of the Mikir Hills. It is only in such places where the hills force the river to keep to a definite channel that the traveller up the Brahmaputra can see any signs of towns or large villages. Elsewhere, the river, by constantly changing its course, has appropriated to itself a belt of land extending perhaps to as much as half a dozen miles on either side of the stream. This *chipari* land, as it is called; is in the main a wilderness of marsh and grassy jungle, interspersed with patches of mustard and broadcast paddy brought under fluctuating cultivation by immigrants from eastern Bengal. Further inland, on either side of the river, there is a belt of low-lying level in which long-stemmed paddy is grown. Thereafter comes a zone of higher and more thickly populated land, where there is still much grassy jungle and forest but where there is also a considerable amount of permanent cultivation, mainly transplanted rice. Further inland, towards the hills on either side, the population becomes more scanty and cultivation begins to give way to extensive forests and grass savannahs. Transplanted rice is grown on fields irrigated from hill streams; and tea on the high flats and hill slopes.

The valley of the Surma, at any rate that part of it which falls within the Province of Assam is small in comparison with that of the Brahmaputra, covering only 7,247 square miles. To the north, and rising in an abrupt wall 4,000 feet high, stands the plateau of the Khasi and Jaintia Hills, and further east the angular and serrated range of the Barrail or "Great Dyke." Enclosing the valley on its eastern border are the parallel ridges of the mountains of Manipur, while, on the south, similar parallel ridges belonging to the same system

extend from the Lushai Hills, and from the Tippera Hills in Bengal, for some distance into the plain. The physical conformation of the Surma Valley differs in many respects from that of the Brahmaputra Valley. The reason is that throughout its course in Assam, the Brahmaputra is a comparatively swift moving river flowing between sandy banks which it is continually making and unmaking. The rate of flow of the Surma and its tributaries is slow by comparison and they deposit large quantities of silt every year, with the result that the highest lands in the delta proper lie nearest the river banks and it is there that the soil is most fertile and the population densest. From the river banks the surface slopes backward into great hollows or *haors*, many of which hold some water all the year round and all of which become extensive lakes during the flood season. So low, indeed, is the general level of the western Sylhet portion of the valley that the flood water reaches right up to the foot of the hill ranges and the only dry spots are the artificially raised sites on the river margins, on which the villages are built. Conditions are less unfavourable in eastern Sylhet and Cachar where the level monotony of the plain is broken by ridges which extend inwards from the hills to the south, and where *tilas* (small isolated hills) are a common feature. In the low-lying tracts, the main crop is *aman* (long-stemmed) rice; *boro* (spring rice) is grown, in the dry season, on terraced land at the water-edge of the *haors*; on the *tilas*, or elevated portions, are found not only the village sites but fruit gardens and tea plantations.

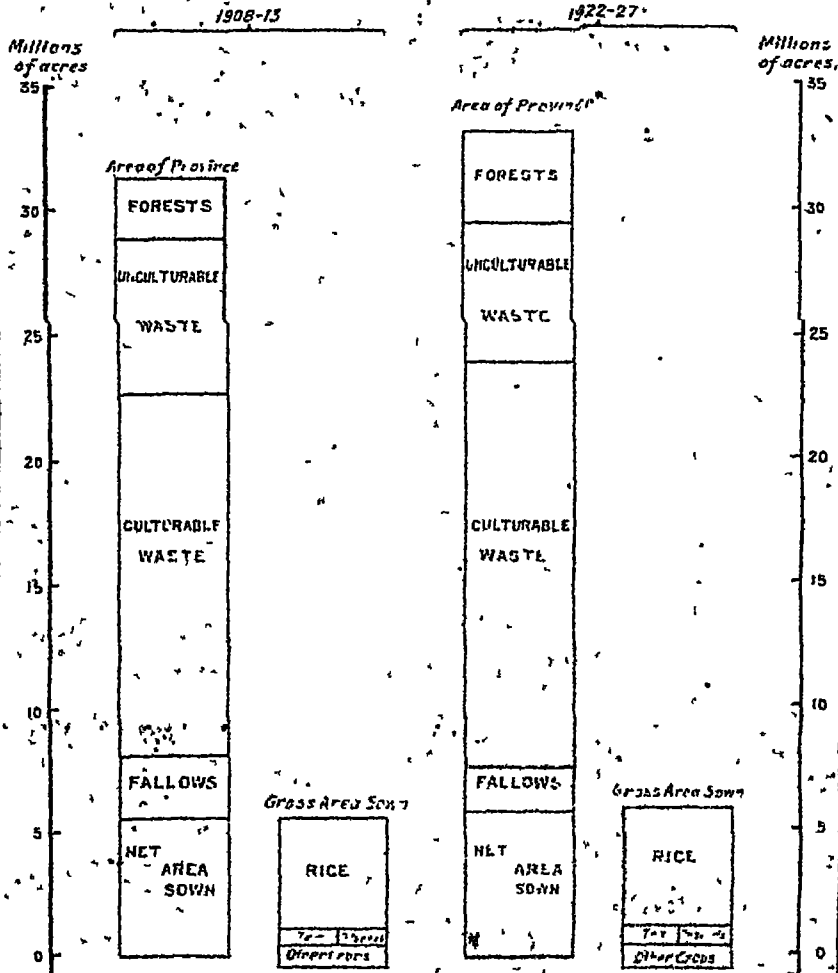
The third natural division of the province consists of the Hill Tracts. These do not form one great compact block as does each of the other two natural divisions, but the various tracts are sufficiently similar in their characteristics to be considered together. The northern portion consists of the Assam Range interposed between the two valleys, and the Mikir Hills which project from that range into the Brahmaputra Valley. In the south there are the Lushai Hills and the ridges which run northwards from these and from Tippera into the Surma Valley. The central portion of the Assam Range consists of a table land at an elevation of nearly 6,000 feet, but on the east and west it becomes broken up into sharply serrated ridges where hill and valley alike are covered with forests. Great stretches of the central plateau consist of undulating grassy hills with occasional groves of pine and oak. The Lushai Hills in the south, which divide Burma from Assam and run at right angles to the Assam range, harbour a scanty population, being for the most part covered with dense bamboo jungle and rank undergrowth.

Most of the cultivation in the Hill Tracts is done on the *jhum*-system. The jungle is cleared with axe and fire, and the seed of hill rice, millets, cotton, potatoes and vegetables is dibbled in among the ashes. A plot is cultivated for two or three years in succession, then allowed to relapse into jungle again for a period varying from three to eight or ten years or more, according to whether land is scarce or plentiful. The best farmers are the Khasis who grow their rice in terraced and carefully irrigated fields in the shallow valleys which are common in the central

ASSAM

CLASSIFICATION OF TOTAL AREA AND AREA UNDER VARIOUS CROPS (5 Year Averages)

Note: The difference between the Gross Area Sown and the Net Area Sown represents the area sown more than once



* Difference in acreage between 1908-13 and 1922-27 is 21,000 acres, as shown by the Director of Surveys.

plateau. Terracing for rice is also resorted to by the Angami Nagas under much more difficult conditions which require stone retaining walls instead of earthen dykes, and to a limited extent, also, by the Sema Nagas and other tribes. Other interesting features of Khasi cultivation are the introduction and rapid expansion of potato growing and the betel and orange groves and pineapple gardens which flourish on the hills and slopes facing Sylhet.

The total area classed as 'culturable' in the province, excluding States and tribal areas, is 23,543,871 acres, out of which only 6,014,317 acres were under crop in 1926-27. The areas under the principal crops in that year were—

Rice	..	..	..	..	4,685,228 acres.
Tea	..	..	..	..	420,664 "
Fruits, vegetables and root crops	..	..	..	..	472,050 "
Rape and mustard	..	..	..	..	365,361 "
Jute	..	..	..	..	186,058 "
Sugarcane	..	..	..	..	40,037 "

Tea occupies a very important place in the agriculture of Assam, not only on account of the area grown, but also because of the high value of the product. It is cultivated in all the plains districts, but more especially in the Sibsagar, Lakhimpur and Darrang districts in the Assam Valley, and Sylhet and Cachar in the Surma Valley. Altogether there are over 900 gardens, the outturn from which amounted to 240 million pounds of black tea in 1926, the average outturn per acre being 602 pounds valued, roughly, at 13 annas per pound. The gardens give employment to about half a million permanent labourers who are practically all immigrants from other parts of India. Investigations in connection with the cultivation of tea and its preparation for market are carried out by the Scientific Department of the Indian Tea Association at Tocklai. Towards the cost of this work Government make a contribution of Rs. 10,000 annually.

As may be inferred from its geographical position and natural features, the climate of Assam offers many contrasts. As a whole, coolness and high humidity are the features which distinguish it among Indian climates. Thus, for example, tea plantations, which in south India are found at elevations of 3,500 feet and over, are found on the plains of Assam a few hundred feet above sea level; and at the elevation which the tea plant requires in the south, the varieties of potatoes usually grown in Britain and many other plants common in English gardens flourish in Assam.

The range in rainfall is much more marked than in temperature; it varies from comparatively light falls in parts of the plains to the world's record for average rainfall of about 450 inches at Cherrapunji.

3. PROVINCIAL INCOME AND EXPENDITURE.

The introduction of the Reforms brought about a complete change in the financial relations between the central and provincial governments. Provincial governments had, up to that time, no separate revenues of their own, their resources being mainly obtained from a share of divided heads

of revenue and from lump assignments from Imperial revenues. With the advent of the Reforms, however, definite sources of revenue were allocated to the provincial governments and there was a complete separation between the revenues and expenditure of the central and provincial governments. In addition, the expenditure on leave allowances and pensions incurred in England, which used to be met by the central Government, became a charge on the provincial governments.

The province started, in 1921-22, with an opening balance of Rs. 32 lakhs and it was anticipated that the prosperity that followed the war would continue and that the year would close with a balance of Rs. 43 lakhs. The wave of depression, however, which swept not only over India but over the world in that year severely affected the finances of the province with the result that the closing balance was only Rs. 6½ lakhs. This serious state of affairs continued during the year 1922-23 and it was necessary for the province to borrow a sum of Rs. 13 lakhs from the Government of India to enable it to meet obligatory expenditure. The strictest economy was enforced and, in 1923-24, retrenchment in every possible direction effected recurring savings to the extent of Rs. 11 lakhs. The Legislative Council also agreed, in 1922-23, to the raising of the fees under the Stamp and Court Fees Acts for a period of three years, bringing in an extra revenue of Rs. 3 lakhs per annum. These Acts were extended for a further period of three years which ends on the 30th April, 1928, and the Council will shortly be asked to make the enhanced fees permanent. Registration fees were also permanently raised in 1923 and resulted in an increase of half a lakh of rupees per annum. The subvention from the central Government towards the cost of maintenance of the Assam Rifles was increased from Rs. 14 to Rs. 16 lakhs in 1923-24, with retrospective effect from 1921-22. The opening of the Goalpara tram line also had an appreciable effect on the forest revenue.

All these measures enabled the province to tide over the crisis and, with the turn of the tide in 1924-25, it was possible to repay the loan taken from the central Government and to make a beginning on the expansion of activities in the nation building departments. In 1925-26, the temporary remission of Rs. 6 lakhs in the contribution to the central Government enabled further allotments to be made for expenditure on transferred departments. Remission of the full contribution of Rs. 15 lakhs in 1927-28 (of which Rs. 8 lakhs was permanent), coupled with an increase in land revenue as a result of resettlement operations in certain districts, has enabled further progress to be made and has also permitted the gradual restoration of the economies effected in 1922-23. From 1928-29 the provincial contribution has been finally and completely remitted.

REVENUE AND EXPENDITURE CHARGED
TO REVENUE

GOVERNMENT
(Figures are in
Revenue and Expenditure)

Receipt heads	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27
<i>Revenue Receipts</i>						
<i>Principal Heads of Revenue—</i>						
Land Revenue	98	92	1,03	1,05	1,07	1,07
Duties	60	64	60	66	74	72
Stamps	15	18	20	21	22	23½
Forests	13	17	20	25	30	31½
Other heads	5	3	6	7	8	7
Railways	—0½	..	..	..	..	..
Irrigation .. ..	..	..	..	..	..	..
Interest Receipts	0½	1	1	1	1	1
<i>Civil Administration—</i>						
Administration of Justice	1	2	2	2	2	2
Jails and Convict Settlements	1	1	1	1	1	1
Police	1	3	1	3	2	2
Education	2	2	2	2½	2	2½
Medical .. ..	..	..	..	0½	..	..
Public Health	1	1	1	0½	1	1
Agriculture (including Co-operation and Veterinary) .. ..	..	..	..	..	..	..
Industries .. ..	..	..	..	..	..	..
Other departments	0½	..	2	..	1	..
Civil Works	3	4½	4	5½	4½	4½
Miscellaneous	1½	1	3	5	3½	5½
Miscellaneous adjustments between Central and Provincial Governments .. ..	..	..	..	0½	..	..
Total, Revenue Receipts ..	2,00	1,99½	2,26	2,45½	2,59	2,58½

Capital Receipts

<i>Capital Receipts</i>						
Revenue Surplus .. ..	..	..	21	30	22	0½
Famine Insurance Fund .. ..	..	..	..	..	..	..
Loans and advances by Provincial Governments	2	4	4	5	1	1½
Loans between Central and Provincial Governments .. ..	..	13	..	..	..	..
Advances from Provincial Loans Fund .. ..	..	..	..	..	..	..
Total, Capital Receipts ..	2	17	25	35	23	2
Opening Balance	32	0½	..	23	44	65
Total ..	34	23½	25	58	67	67

OF ASSAM

lakhs of rupees)

charged to Revenue

Expenditure heads	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27
<i>Expenditure charged to Revenue</i>						
Direct Demands on the Revenue—						
Land Revenue	18	15	16	16	17	18
Forests	10	11	11	14	16	14
Other heads	5	4	5	4	17	13½
Capital outlay on Forests .. .. .	..	..	..	..	1	1
Railways	1½	1	1	1	1	0½
Irrigation—Revenue Account	1½	0½	1	1	1	1
Irrigation—Capital Account charged to Revenue .. .. .	..	..	..	..	..	..
Debt Services Interest	-0½	-0½	1	-1	-1	-1
Civil Administration—						
General Administration	28	27	28	26	27	27½
Administration of Justice	7	0	8	0	0	0
Jails and Convict Settlements	5	5	5	4	4	5
Police	20	31	18	22	24	26
Education	23½	28	23	24	25	27
Medical	10	10	10	10	11	11½
Public Health	6½	5	5	5	10	10
Agriculture (including Co-operation and Veterinary)	5	4	4	4	5	5
Industries	1	1	1	1	1	1½
Other departments	1	2	..	2	2	1½
Civil Works	43	41	38	38	40	50
Miscellaneous	10	10½	15	20½	19	22
Miscellaneous adjustments between Central and Provincial Governments	15	15	15	15	0	15
Provincial Contribution .. .. .	..	..	..	..	..	..
Assignments to the Central Government	3	..	..	..	..	..
Total, Expenditure charged to Revenue	2,23½	2,20½	2,05	2,15½	2,37	2,58

and Expenditure

<i>Capital Expenditure</i>						
Revenue Deficit	23½	21	..	..	..	..
Forest, Irrigation, and other Capital outlay not charged to Revenue .. .. .	..	1½	1	1	..	2
Famine Insurance Fund .. .. .	..	..	..	..	..	..
Loans and advances by Provincial Governments	4	1	1	1	2	1½
Loans between Central and Provincial Governments .. .. .	..	..	..	12	..	..
Provincial Loans Fund .. .. .	..	..	..	..	..	..
Total, Capital Expenditure	27½	23½	2	14	2	3½
Closing Balance	6½	..	23	44	65	63½
Total	34	23½	25	58	67	67

4. REVENUE ADMINISTRATION AND LAND RECORDS.

It is a difficult matter within the limits of space here permissible to convey to the reader any useful account of the land revenue systems which history and natural features have imposed on successive generations of administrators in Assam. In general, the earlier collectors of revenue were faced with the problem of getting what they could from any particular locality; and the arrangements they made were of a kind which left their successors much scope for ingenuity in giving the revenue administration some degree of system and uniformity in its modes of assessment and methods of collection. Sometimes indeed, those successors were left no choice; for, following the Bengal lead, permanent settlements had been effected at an early stage of British occupation. Thus, in the important district of Goalpara, about two-thirds of the land was permanently settled by the representatives of the East India Company for a sum of Rs. 11,411 annually; which works out at less than one rupee per 100 acres. The foundation for this bargain was laid by the Moghuls who, being unable to subdue the district, were content to take what was offered and payment was made in kind. "Kind" was converted into "cash" by the British about 1793, at the figure above mentioned. Moghul revenue collectors were more successful in the rich and populous district of Sylhet. Here, towards the end of the sixteenth century, they are said to have derived a revenue of about Rs. 1½ lakhs, and when a permanent settlement was made some two centuries later, their British successors fixed a payment of Rs. 3½ lakhs on about 1,350,000 acres of land, or Rs. 24 per 100 acres.

In Cachar, the basis of the early settlements had been laid down by the Kachari Rajas who, whatever the principles were on which they ruled, believed in communism between those from whom they extracted revenue. Occupiers of land were grouped territorially into communities or *khels* having nothing in common in race or religion, but sharing an unlimited liability to contribute to the sum due from their *khel* until the Raja's demand was satisfied. The *khel* system too was taken over by the British, and revenue continued to be levied from communities until the end of the nineteenth century, when the land was classified in accordance with modern methods.

Natural conditions, like history, raised difficult questions for the early settlement officers of Assam. It was not merely that the soil varied as it does in other Indian provinces, but, in the Brahmaputra Valley, there was much good culturable land lying waste so that the peasant dissatisfied with his acres, or his land tax, could easily abandon his holding and go in search of better conditions elsewhere. Thus, when land had been surveyed and the assessment fixed, it by no means followed that a village, or group of villages, would yield their estimated revenue even in good years, for a substantial percentage of the area included as cultivated might be relinquished. Again, in the hilly districts, occupied largely by the tribes practising *jhum* cultivation and shifting from place to place at intervals of a few years, special and varying methods of raising land revenue were called for.

A century's experience has now been codified in the Fourth (1921) Edition of the Assam Land Revenue Manual, which sets out the law governing the subject. The Manual contains the "Assam Land and Revenue Regulation, 1886," the rules made under the Regulation for settlement, survey, registration of title and other matters engaging the attention of revenue officers; and also the "Assam Local Rates Regulation, 1879" defining the measures to be taken for raising local rates and meeting expenses incurred for the prevention and relief of famine in different parts of the province.

Outside the permanently settled and hill districts, the ordinary Assamese ryot holds on an annual tenure or a decennial lease. The lease confers a right to possession on re-settlement and a heritable and transferable title; the tenant is not bound to retain possession for the term of his lease, but may relinquish at any time on giving the prescribed notice to the local revenue officer. The annual tenant has in theory no right to retain his land beyond the year for which he has taken it, but, in practice, so long as he pays his taxes he is not disturbed. A cultivator may enter on, and cultivate, any unoccupied waste land without notice, provided he pays the revenue demand; and, if he makes an application for the waste, he can secure a title to possession after a fresh settlement of the village has been made. In some districts, the practice of entering on waste land is very common and much of the time of local revenue officers is spent in surveying newly reclaimed land and issuing leases to applicants for possession.

Early in the present century, the system of revenue settlement common in many other parts of India was introduced into Assam and the quality of the land held by a cultivator was taken into account in fixing his land revenue. These revised settlements are now in progress. This system took the place of a more summary system under which land was merely classified under the three heads, homsteads, transplanted rice lands and other lands.

In the late "thirties" of the nineteenth century, the revenue authorities in Assam were called upon to deal with a land question of a novel kind. The discovery that good tea could be grown in the province led to applications for land by companies and private planters. Special rules, the first of which were issued in 1838, were framed for those desiring to take up the new industry. At first, grants of land were offered in the Brahmaputra Valley on condition that one-fourth of the area taken up should remain revenue-free in perpetuity; the remaining three-fourths became subject to revenue after from five to twenty years according to the amount of reclamation called for. In 1854, these rules underwent some modification and they were extended to the Surma Valley; but soon afterwards, in 1862, new regulations provided for the acquisition of land by tea planters in fee-simple, and land was sold free of revenue demand at rates varying from Rs. 2-8 to Rs. 10 per acre. Advantage of this offer was taken by most of those engaged in tea cultivation and about 330,000 acres became private property, free from the future demands of the revenue officer. In 1876, the rules were again altered and those requiring land for tea are

now charged Re. 1 per acre for the concession of a 30-year lease. For two years, the land is held free of revenue and thereafter the rates rise to 8 annas per acre in the eleventh and Re. 1 in the twenty-first year. After the lease expires, a reassessment is made.

In the Brahmaputra Valley, the special terms above referred to were intended for persons engaging in the tea industry, and land could only be acquired for tea if it was not needed for growing food crops; but in Cachar, waste land could be acquired on similar special terms for ordinary cultivation. The rules governing the concessions varied, but leases for from twenty to thirty years, with freedom from revenue for two or three years, were usual.

Throughout the hill districts of Assam, the revenue is not assessed on the quantity of land, but on each house occupied. A usual rate is Rs. 2 to Rs. 3 per house.

Outside the hill districts, the province is divided into two commissioners' divisions for revenue, as for other administrative purposes. The populous Surma Valley is composed of two, and the Assam Valley of six, districts, each in charge of a Deputy Commissioner with the duties of the Collector and Magistrate of other provinces; and, as elsewhere, the Deputy Commissioner is assisted by members of the Indian and Provincial civil services. Outside the civil services there is, in the temporarily settled districts, a group of men occupying an intermediate position, in that they are not regularly salaried officers, but are paid as revenue collectors on a commission basis. They are known as *mauzadars*; each has charge of a *mauza*, or small group of villages. To the people they represent the Government, to the Government the people. They are a survival of an old form of agency for revenue collection. Originally the *mauzadar* was a petty revenue farmer, who contracted to pay over the revenue due by his *mauza*; so long as he paid up a fixed sum, he could keep the balance of the money he extracted for himself. This was obviously an undesirable method of revenue collection, and it was replaced by a system under which an annual settlement was made with the *mauzadar* and he was paid by a commission sufficiently liberal to satisfy him and to cover his bad debts.

Some years ago, an attempt was made to abolish the *mauzadar* system, and to substitute salaried tahsildars responsible for revenue collection in groups of *mauzas* forming a tahsil. But under Assamese conditions, it was found that this ordinary Indian method was a doubtful benefit, and *mauzadars* have been restored in some of the areas from which they had been displaced by salaried officers.

The appointment and dismissal of *mauzadar's* rest with the Deputy Commissioner of the district, subject to the Commissioner's approval. On the death of a *mauzadar*, the claims of members of his family to the succession are first considered, and a son, if he has the requisite qualifications of character and education, is appointed. If no member of the family is suitable, some other person of the same race as the majority of the population of the *mauza* is chosen; for it is important that this officer should be a man of the people. As a rule, the *mauzadar* is required to reside in

his *mauza*. Apart from the collection of revenue, he is entrusted with numerous duties of the kind performed by *naib-tahsildars* elsewhere; such as the supervision of village headmen, the submission of weekly crop reports and of monthly vital statistics. He must also report persons who allow their cattle to trespass, or who encroach on roadside lands, must receive applications for waste land, issue forest permits and assist in assessing income-tax. He is thus not merely a revenue farmer, but a responsible local person entrusted with the charge and welfare of his *mauza*, and paid by results when he produces the proceeds of revenue collections. The *mauzadar* on the plains corresponds to the petty chiefs, characteristic, under both ancient and modern administrations, of the hills of Assam.

In five of the districts of the Upper Brahmaputra Valley, there are village headmen, as in most Indian villages. In Assam, they are known as *gaonburas*: they are the "elders and spokesmen" of their people, and they are expected to act as leaders in carrying out works for local benefit. The repairing of wells, the fencing of public tanks, the maintenance of rights of way, the condition of the village school room, are all matters for the *gaonbura*. He has also the oversight of affairs that his fellow-villagers may regard as benefiting the Government rather than the village, for he must assist the *mauzadar* to collect revenues, and he helps the police by reporting when criminal matters crop up. For these duties he is entitled to some remission on his own land revenue, but the maximum remission is Rs. 8; so that the village elder of Assam must look to the dignity of his office, rather than to the direct emoluments, for his reward.

Land Records and Survey.—For the purpose of land records and survey the province may be divided into three sections:

- (1) The hill districts;
- (2) The temporarily settled areas;
- (3) The permanently settled areas.

In the hill districts, the rights in land have not generally reached a stage which requires a cadastral survey and no such survey has as yet been undertaken.

In the temporarily settled areas, the survey of cultivated lands is practically complete and, as cultivation spreads in these areas, the cadastral survey keeps pace with the extension.

No survey of the permanently settled areas has, as yet, been made. Power exists under section 27 of the Assam Land and Revenue Regulation for the recovery from proprietors and landholders of the cost of survey and of erecting and repairing boundary marks. But the main object of such a survey is to prepare a record of rights and no power at present exists for the recovery from the proprietors and landholders of the cost of preparing the record. An experimental survey conducted in the district of Sylhet, between 1914 and 1918, showed that the cost of preparing a general record of rights would impose an unduly heavy burden on

provincial revenues. An attempt to obtain the necessary power to recover the cost from the proprietors and landholders was made but the Legislative Council rejected the measure.

5. THE CULTIVATOR.

The total population of the British Territory of Assam in 1921 was 7,606,230 of whom 7,428,085, or 97·7 per cent, who lived in 30,957 villages, were classed as rural; the remainder of the people lived in 28 towns, most of them of small size. Only thirteen of these towns had a population exceeding 5,000. Conditions vary widely within the three natural divisions. In the Brahmaputra Valley, the most densely populated district is Kamrup with 197 persons to the square mile, whilst, in the district of Balipara, only seven persons per square mile are found. The density of population in the Surma Valley is thrice that in the Brahmaputra. In the district of Sylhet there are 472, and, in the plains part of the Cachar district, 269 persons to the square mile.

The most densely populated area in the province is the subdivision of Habiganj in the district of Sylhet with 545 persons to the square mile.

The hill tracts are sparsely and unevenly peopled; only at the headquarters of the administration in Shillong, which has 17,700 inhabitants, is there any considerable density of population.

As contrasted with the state of affairs in most parts of India, the boundaries of Assamese villages are often ill-defined. Detached hamlets and cottages are a common feature.

The wealth of racial admixture which has gone to the formation of the present day cultivators of the plains of Assam, favoured as the country is by good soils, and in most parts by a reasonably good climate for crop growing, should, by a process of natural selection, have thrown up groups of husbandmen who might have been expected to compete in skill with the Arains and Jats of the Punjab or the Kunbis of Gujarat. But Assamese history has not been of a kind that stimulated the peasants of the plains. Even when they satisfied the demands of their Rajas, their crops were never secure from the attention of the black-mailers of the hills; and British protection has not long enough been available to allow of the emergence of agricultural talent, unless indeed it be among the small caste of Baruis or betel vine growers of the Surma Valley.

Apart from race and history, two circumstances may be noted as explaining the lack of agricultural achievement. In the Upper Brahmaputra Valley, land is, or was until recently, abundant, and communications are poor. Until tea gardens provided a local market, there was little stimulus to enterprise. A cultivator grew what was required to feed his household and to pay the revenue collector; and if it is asked "what more was required?" the answer is that he neglected to provide for his cattle, as he might have done; for he was not faced with the great difficulty in finding food for them that confronted the peasants of Lower Bengal. The second circumstance

is one over which the cultivator himself has no control. The people of the submontane tract of the Goalpara district, known as the Duars, work in a notably unhealthy tract where vitality is low. The cultivators of the Surma Valley, too, experience a peculiarly relaxing climate; and they at least can claim that under difficult circumstances they do contrive to grow reasonably good crops of rice.

The hills of Assam are occupied by races many of whom are not, and do not aspire to be, cultivators; but these hillmen, when they do settle down to crop-growing, show enterprise and skill. Potato cultivation is carried on extensively by the Khasis, and they show much intelligence in laying out and preparing the land for this crop in places, however difficult of access, where the rock has a fair covering of soil.

At the census of 1921, slightly under half a million people, or 6·2 per cent of the total population, were shown as literate, that is, as being able to write a letter and read the answer to it. The proportion of literates is low compared with that in the neighbouring provinces of Burma and Bengal, but the percentage compares favourably with the figure of 4·7 recorded at the previous census. General education is dealt with in the section on that subject.

6. THE AGRICULTURAL DEPARTMENT.

The history of the "Agricultural Department in Assam" dates back to 1882. In the early days, the department was concerned mainly with the organisation and maintenance of village land records but it made at least one solid contribution to agriculture by starting an investigation which ultimately led to the introduction of exotic potatoes in the Khasi Hills. That other lines of investigation failed to produce any very abiding result is not surprising in view of the fact that the department had neither any experimental farm of its own, nor any agricultural expert to plan and supervise the experiments. A graduate in agriculture was appointed Assistant Director in 1897 and the Upper Shillong experimental farm was opened in the same year. Land records, however, continued to be the main concern of the department until 1907 when, as a result of the constitution of the new province of Eastern Bengal and Assam, a separate Department of Agriculture was created with a civilian Director of its own. Between 1907 and 1911 several experts were recruited so that, at the latter date, the staff consisted of two deputy directors, a fibre expert, a chemist, a botanist, three superintendents of agriculture, an entomological collector and a mycological collector. The rapid progress made during these years met with a serious check as a result of the annulment of the partition of Bengal and the reconstitution of the Province of Assam in 1912. Along with the districts which were handed back to Bengal went the economic botanist, the fibre expert, the three superintendents of agriculture and the two collectors, and the department was again combined with that of Land Records. Between 1912 and 1921, however, two Imperial Service officers and a number of subordinates were added to the cadre and several stations were opened—an experimental fruit garden at La Chaumiere, a rice farm at Karimganj

and a sugarcane farm in North Kamrup. The sugarcane farm was given up in 1920 and a like fate overtook the fruit garden in 1921. In 1922, the Department of Agriculture was, for the second time, separated from that of Land Records and placed with the departments of Industries and Co-operative Societies under one Director.

What was described as a minimum scheme for the development of the department was submitted, in 1921, by the then Director of Agriculture, and received the general approval of Government, whose intention it was to carry it out over a period of five years subject to the provision of funds by the Legislative Council. The scheme provided for a considerable expansion of staff of all grades and for the opening of several new stations, and would have entailed an expenditure of Rs. 5.5 lakhs as capital cost and Rs. 3.90 lakhs recurring. Unfortunately, a period of financial stringency supervened, with the result that only a fraction of the expansion originally contemplated has been carried out. Twenty-six non-gazetted assistants have been added since 1923, one rice farm was opened in the Upper Assam Valley in 1923, and a cattle breeding farm was established in the same locality in 1927; but meanwhile the two Imperial officers had left the service. The average net expenditure on the department is about two lakhs of rupees, or one per cent of the total provincial expenditure. The present gazetted staff consists of a deputy director, an economic botanist and three superintendents; in the non-gazetted grade there are two botanical assistants, one entomological assistant, one chemical assistant, one mycological assistant, sixteen agricultural inspectors, sixty demonstrators, one fruit inspector and four farm managers. For experimental work there are four stations, at Upper Shillong, Jorhat, Titabar and Karimganj; and three depôts have been established for seed distribution, at Gauhati, Jorhat and Sylhet. A Development Board has recently been constituted, the membership of which consists of two officers from each of the Agricultural, Co-operative and Industries departments and of non-officials elected by the Legislative Council; its function is to advise with regard to the activities of the three departments.

The planning and the control of the experimental work on the farms is shared by the economic botanist and the deputy director, the former being responsible for the botanical experiments and the latter for general experiments and farm management. At the Karimganj rice experimental farm, a considerable amount of work has been done on pure line selection with the object of evolving improved strains suitable to the locality, and work on cross-breeding, root systems, water requirements, transpiration and seed testing is in progress. Six improved varieties have been distributed, viz., the *Georgesail*, *Indrasail*, the *latisail* and *murali aus*, *basmati* (fine *aus*) and *birpak* (coarse *asra*). Several hundreds of types are at present under observation, including varieties from other parts of India and from abroad.

The Titabar rice station was opened in 1923 to provide for the needs of the Assam Valley. Here again several hundreds of types have been isolated but the work has not yet reached the stage at which seed can be given out for distribution.

Work on sugarcane has been in progress at the Jorhat farm since 1906. It includes the acclimatisation, testing and selection of varieties, local and exotic, and manurial and rotational experiments. As a result, several varieties of cane have been ascertained to be suited to the needs of the local cultivators, *e.g.*, B 147, B 376, B 3412, J 33 (a), D 74 and Co 9. Manurial experiments have indicated the advisability of correcting acidity in high land by the application of lime or wood ash, and the beneficial effects of ploughing in *dhaincha* and cowpea as green manure.

One of the principal objects with which the Upper Shillong farm was started in 1897 was the introduction of superior varieties of potatoes. The extent to which this object has been achieved is abundantly evident in the wide areas which are now under exotic potatoes in the higher plateau of the Khasi Hills. The crop has brought with it many problems which the department is patiently trying to solve; the problem of storage; of combating 'blight'; of eliminating varieties that are susceptible to disease; manurial problems and methods of cultivation; whether to plant whole or cut, large or small, potatoes, etc. The success of the introduction of potato cultivation has brought with it its own peculiar responsibilities. Few crops degenerate so quickly and so completely when left to themselves as does the potato, and, in important potato growing countries, research is ever on the alert to evolve new varieties from seed to replace varieties which are becoming played out. It, therefore, seems worthy of notice that some of the sixteen varieties now being grown for distribution on the Upper Shillong farm were imported as long ago as 1912 and that more than one of the varieties which have achieved a wide distribution, *e.g.*, the Up-to-date, have already faded into comparative obscurity in England. The department is, however, continuing to import new varieties for trial.

Horticultural work is in the charge of the recently appointed fruit inspector. He is now trying to introduce methods of manuring orange orchards, irrigating them during the winter and pruning the trees, besides teaching better methods of picking and packing the fruits for long distance transit by rail. There are several government orchards scattered throughout the province. Orange seedlings and pine-apple suckers are distributed every year from the departmental seed depôts.

A small herd of cattle is maintained at the Upper Shillong farm. Some twenty years ago, the herd consisted of three groups—a group of somewhat obscure origin but believed to be a cross between an English and an Indian breed and known as the Patna-Taylor breed, a second group which was a cross between the above-named and the Khasia cattle, and a third group which consisted of crosses between the Patna-Taylor and the Bhutia cattle. The second and third groups have been discarded. The few bulls produced by the twenty cows which now constitute the herd meet with a ready sale for breeding purposes. On the new breeding farm at Khanapara a herd of pure Sindhi cattle has been established, and a herd of cows from Sonapur in Bihar is being crossed with bulls imported from Rangpur. A few Thar Parkar cows and bulls have also recently been imported.

For district work the province is split up into three divisions, each in the charge of a superintendent, who has a staff of inspectors and demonstrators under him. The superintendents' charges consist of the Upper Assam Valley, the Lower Assam Valley and the Surma Valley. Demonstration work in the Khasi and Jaintia Hills is directly under the deputy director of agriculture, who also exercises general supervision over the superintendents' charges. The department has no demonstration farms, all the demonstrations being done on the cultivator's own fields. Each demonstrator concentrates his energies on five or six groups of villages, each group consisting of one or more villages covering an area of two to three square miles. The main subjects of demonstration are the improved varieties of rice, potatoes, jute and sugarcane, the introduction, where suitable, of crops like pulses, groundnut, *arhar*, cotton, and fodder crops, conservation of the manual resources of the village, and terracing in the hills and upland valleys. To the actual demonstrations in the field and village are added lectures and exhibitions, and work through honorary correspondents and co-operative societies. Distribution of improved seed, as well as implements and manures is done through the three permanent depôts, and temporary depôts at different centres fed by these permanent depôts, which purchase their stocks out of an annual grant allotted by Government. On an average, the depôts between them distribute 1,150 *maunds* of improved paddy, 2,500 *maunds* of seed potatoes, 100 *maunds* of jute seeds, one lakh of sugarcane setts, 200 cane mills and about 2,000 *maunds* of bonemeal each year. The latter is in considerable demand as a manure for rice in the intensively cultivated terraced fields in the Khasi and Jaintia Hills.

There is no agricultural college in the province. Youths who have been chosen for eventual appointment as demonstrators in the department are given stipends and sent for two years' training to one or other of the experimental farms. Students destined for the Subordinate Agricultural Service are sent to agricultural colleges in other provinces, the local Government concerned being paid a fixed sum for each student trained.

7. THE VETERINARY DEPARTMENT.

The Veterinary Department in Assam is under the administrative control of the Superintendent who is the only Imperial Service officer in the cadre. His staff consists, at present, of four inspectors and sixty-one veterinary assistants in the Subordinate Service, all of whom are graduates of the Bengal Veterinary College. Of veterinary institutions there are six under the control of the department, three hospitals and three dispensaries. Each of these institutions is in the charge of an assistant. The rest of the assistants excluding staff and reserve assistants (about twelve in number), are lent to local boards and are in charge of local board dispensaries of which there are thirty-nine. Financially, the boards are responsible for two-thirds of the assistants' pay, for their travelling allowances, and for the dispensary buildings. Government pay the remainder of the salary, supply instruments and make a

small contribution towards the cost of medicines. Transfers of assistants are arranged by the Superintendent after consulting the wishes of the boards concerned.

The three inspectors in administrative charge of circles are entirely under the control of the Superintendent. Their duties are to supervise the work of the assistants, to make returns to the Superintendent, and to inspect under the Glanders and Farcy Act. Full use is made of the veterinary hospitals and dispensaries by cultivators who are fortunate enough to live within reach of them but such institutions are few and far between and can obviously only deal with but a small part of the work waiting to be done. The vast majority of the cultivators have to depend for veterinary advice on the chance visits of the touring assistants. How heavy are the odds against a cultivator in the Surma Valley getting his sick animal treated can be gauged from the fact that an assistant in that locality is responsible, on the average, for about 137,000 cattle scattered over an area of 1,489 square miles.

The main work of the department is concerned with the combating of contagious diseases by inoculating the healthy, and isolating and treating the sick, animals, treating ordinary ailments at assistants' headquarters, village to village inspections, and lectures to cattle owners. During the year 1926-27, the assistants visited 10,000 villages, performed 42,000 inoculations and 1,600 castrations, and treated 28,000 contagious and 50,000 non-contagious cases. Rinderpest in cattle, which, in each of the years 1925-26 and 1926-27, carried off more than 30,000 animals (more than half the total deaths among all kinds of animals from all contagious diseases), is the most serious problem with which the department has to contend.

Laboratory work consists in the examination of suspected material for contagious diseases and parasitic infection. No staff is available for systematic experimental research but investigations in the treatment of diseases are made as opportunity arises.

Selected students who aspire to enter the department as veterinary assistants are given a stipend of Rs. 20 a month for the three years' course and sent to the Bengal Veterinary College for training. At present, four to six stipends are granted annually by Government. Some difficulty has been experienced in getting the right type of students to come forward but it is expected that the recent slight increase in the initial pay of assistants will improve matters. Stipendiaries are bound by contract to serve in the department for a period of five years after completing their studies.

8. IRRIGATION.

There are no government irrigation works. In the valleys, more damage is done by floods than by lack of water. On the hill slopes, the cultivators, following traditional methods and often displaying great ingenuity, irrigate their rice land terraces from the numerous small streams. The only assistance rendered by Government is to the Sema

Nagas who are being encouraged to exchange shifting or *jhum* cultivation for settled cultivation. So far, two tribesmen have been trained as instructors and are teaching about six villages the art of constructing irrigated terraces for rice cultivation.

9. FORESTRY IN RELATION TO AGRICULTURE.

Of the total area of the province, nearly twenty-seven per cent (20,738 square miles) was under forest in 1927. There are two main classes of forests, viz., reserved forests which have been legally constituted as permanent sources of forest produce, or for other economic reasons, and the unclassified State forests which include all unoccupied government waste lands. In addition to these, there is a small but increasing class consisting of tracts which have been reserved as village forests for the provision of the ordinary petty requirements of the people. The distribution between the three classes is as follows:—

	Sq. Miles.
Reserved forests	6,011
Unclassed State forests	14,675
Village forests	52

In the year 1926-27, 4,101 square miles of forest were closed, and 14,998 square miles were open, to grazing to all animals and 1,587 square miles to all animals except browsers. But, as extensive grazing grounds are available outside the forests, there is little demand for grazing within the forests. Cultivators' cattle are admitted on various terms—at full rates, privileged rates, by right under settlement, and free during the pleasure of Government. Under all four categories combined, the total number of cows, bullocks and buffaloes admitted was less than 28,000. Although, in certain parts, fuel and timber for local use are obtainable only at a high cost, there is no general dearth of timber for agricultural purposes. All persons who hold land direct from Government are allowed to remove from unclassified forests, free of charge, inferior kinds of timber and other forest produce sufficient for their own requirements. The chief minor products removable under permit are bamboos, canes, reeds and thatching grass, the value of such products removed under free grant in 1926-27 being 2½ lakhs of rupees. Of direct importance to agriculture, too, is the large amount of timber used by the fourteen sawmills engaged in the manufacture of tea chests, which absorb more than two million cubic feet of timber annually.

The formation of village forests represents an attempt at providing for villages the permanent supply of their forest requirements (fuel and building materials) near at hand. Whether the scheme is going to be a success or not, it is yet too early to say. That hopes are entertained for it, is evident from the fact that new areas are being added yearly, but the Conservator of Forests is of the opinion that the importance of proper management is not yet fully appreciated by the average villager and that more importance is likely to be attached to immediate needs than to the demands of the future.

10. GENERAL EDUCATION.

The total expenditure on education in Assam was Rs. 43·84 lakhs in 1926-27 as compared with Rs. 32·7 lakhs in 1920-21 and Rs. 25·6 lakhs in 1916-17. Of the total expenditure in 1926-27, 58 per cent was met from provincial revenues, 13 per cent from local and municipal funds, 17 per cent from fees and the balance, 12 per cent, from subscriptions and other sources. In 1916-17, provincial revenues supplied only 39 per cent of the expenditure whilst local and municipal funds supplied as much as 30 per cent.

The total number of male scholars at recognised institutions in 1926-27 was 235,742, of whom 183,650 were attending primary schools. Taking the primary school age as from 5 to 10 years and using the 1921 census for that age-period, the proportion of boys of primary school-age attending primary schools of all kinds in 1927 was 28·9 per cent.

The total of the female scholars at recognised institutions in 1926-27 was 34,691, of whom 30,025 were attending primary schools. Calculated in the same way as for male scholars, the proportion of girls of primary school-age attending primary schools in 1927 was 4·84 per cent.

The notable feature of the female education in Assam is that half of the total scholars are receiving their education in schools for boys.

In addition, 17,572 boys and 615 girls were attending unrecognised institutions.

The following Table gives further particulars regarding male education in recognised educational institutions in the province :—

Kind and number of institutions	Number of pupils	Percentage at each kind of institution	Cost per pupil
3 Arts Colleges	1,040	0·41	Rs. 340·8
1 Professional College	91	0·04	200·4
45 High Schools	15,299	6·06	46·5
300 Middle Schools	31,013	12·29	13·7
4,377 Primary Schools	199,903	79·19	5·1
155 Special Schools	5,074	2·01	35·6
4,881 Total	252,420	100·0	10·7

A compulsory Primary Education Act was passed in 1927 under which local authorities may submit schemes for compulsory education in their areas. As the Act was passed so recently as last year, there has been no time to permit of schemes being submitted. The view of the Director of Public Instruction, in the evidence which he gave before us, was that compulsion might be introduced in very limited areas, if local bodies could obtain financial assistance from provincial revenues, but that for the mass of the people the incidental expenses of clothes and school books would be a burden.

There is provision in the province for training the teachers required for primary and middle schools. Teachers for high schools receive their training in Bengal. It has not been found possible to make any official provision for adult education. Night schools for men have been started by the Social Service League and other agencies and assistance has been given by Government.

As the percentage (4·8) of girls of school-going age actually at primary schools shows, female education has as yet made little progress. In the Khasi Hills female education is, thanks to missionary efforts, more advanced than in the plains. The Director of Public Instruction was able to tell us that, though opinion moves very slowly on the subject, yet it does move in the direction of providing education for girls. Ten years ago there was no high school for girls, whereas now there are five such schools, in which, in 1927, over 1,000 pupils were enrolled.

Higher and secondary education for boys is but little developed and there has so far been no attempt to give an agricultural bias to it by providing agricultural classes with farms or school gardens attached. But, in a recent revision of the middle school curriculum, provision was made for various optional courses, of which agriculture would be one, to be instituted if and when a demand arose.

Assam has a special problem in bringing education within reach of the tribes in the Khasi and Jaintia Hills, and the Naga, Garo, Lushai and other hill tracts. Considerable progress has been made in the Khasi and Jaintia and Lushai Hills. Among the Nagas, also, a number of schools have been established, particularly in the Angami country. Luzeku Sema who gave evidence before the Commission for the Sema Nagas, for whom one school only has so far been opened, no doubt correctly represented the general view of his people in regard to education when, in reply to a question, he said "some boys would like to learn when they are young, and the parents are quite ready to give them education, but during the years of education they have to feed them without getting any return from them, so that people are not very keen about it." In 1926-27, 2,401 boys were receiving primary, and 79 boys secondary, education in government schools in the Naga Hills; this represented an increase of 114·3 per cent over the number of pupils in 1921-22.

11. CO-OPERATION.

Although the co-operative movement in Assam began with the constitution of Eastern Bengal and Assam as a separate province in 1905, little headway was made till 1919, when the staff under the Registrar of Co-operative Societies was strengthened. The need for the movement was as great in this province as anywhere else in India. Agriculturists in Assam have always depended on traders and moneylenders, whether local or Marwari, for providing them with the credit they require for agricultural and other purposes. The loans, however, which they get from this source are usually obtained on very hard terms, the rate of interest being seldom less than 25 per cent and, in some cases, being as

high as 60 per cent per annum. Long-term credit is obtained only on mortgage security, and the borrower also incurs substantial loss by being compelled to sell his produce through the moneylender.

Attempts to improve the financial condition of cultivators by the formation of co-operative societies began to be made in 1905. The societies formed were credit societies, and development until now has been almost entirely on the credit side of the movement. At the end of March, 1919, the province had 333 agricultural credit societies with a membership of 11,465 and a working capital of Rs. 5 lakhs. To finance these societies there were 15 central banks with a working capital of Rs. 4½ lakhs. By the end of March, 1927, the number of agricultural societies went up to 998; the membership to 42,500; and the working capital to Rs. 18½ lakhs. Of the working capital, Rs. 78,000 formed the share capital, Rs. 1½ lakhs was held on deposit from members, Rs. 1½ lakhs on deposit from non-members, while Rs. 10½ lakhs were borrowed from co-operative banks or societies; the reserve fund amounted to Rs. 3½ lakhs. To finance the primary societies there was the Provincial Bank with a capital of Rs. 2½ lakhs, and 15 central banks with a capital of Rs. 10½ lakhs. During the year societies of all descriptions advanced to their members loans amounting to Rs. 11½ lakhs. The usual rate of interest on the loans was 15½ per cent. Although this rate is high, it compares favourably with the average rate on loans given by moneylenders, which is 36 per cent.

An attempt is now being made to organise the supply of long-term capital to agriculturists; and a start has been made by the formation of one land mortgage bank in Kamrup and another in Sylhet. There are, at present, no separate purchase societies but the Agricultural Department distributes seed and implements through the medium of existing credit societies. The transactions of this kind amounted to Rs. 17,000 last year. Attempts to organise co-operative sale have so far not met with much success. But a jute sale society has recently been formed.

The department is controlled by the Registrar who also holds the post of Director of Agriculture and Industries. For the co-operative work, he has under him one assistant registrar, a provincial auditor, and eleven inspectors. The audit of societies is done by these government-paid inspectors who do both the work of inspection and of audit. Fees for audit are recovered from societies. The department is assisted by honorary organisers, of whom there are twelve at present. These help the official staff in doing propaganda and in popularising the movement.

A recent development has been the formation of the Surma Valley Co-operative Organisation Society which was registered under the Act in 1925-26, and has as its objects the spread of the principles of co-operation and the carrying on of rural development work in the Surma Valley, in the direction of improved sanitation, medical aid, and promotion of rural industries through the medium of co-operative organisations. Though of recent origin, it has, by the publication of a quarterly journal and in other ways, done much to stimulate interest in the movement.

It will be seen, both from the membership and the capital involved, that the movement has so far only touched the fringe of the problem of rural development in Assam.

12. COMMUNICATIONS AND MARKETING.

Although there has been a considerable extension of roads and railways in recent years, the chief means of communication in the province is still its waterways. The Brahmaputra is navigable by large passenger and freight steamers as far up as Dibrugarh; large steamers can get as far up the Surma River as Silchar in the rainy season and to Fenchuganj in the cold weather. Small feeder steamers ply on the larger tributaries in both valleys, while ordinary country boats are very largely used on the network of streams which intersect the Surma Valley and, to some extent also, in Lower Assam. The smaller rivers and streams in Upper Assam do not admit of navigation throughout the year, the bulk of the trade being carried to and from the Brahmaputra by road.

The first railways to be constructed in Assam were two small systems in the north-east corner of the province—a portion of the Dibru-Saidya Railway, constructed and controlled by the Assam Railway and Trading Company, to connect the tea estates on the left bank of the river with the steamer ghat at Dibrugarh, and a portion of the Jorhat Provincial Railway which provided a similar outlet further down the river at Kohilamukh Ghat. Some years later (1894), the Tezpur-Balipara Railway provided a third outlet at Tezpur. These three systems acted merely as feeders to the steamer traffic on the Brahmaputra which was still the sole channel of communication leading to the outer world, and this distinction remained unchallenged until the first section of the Assam Bengal Railway in Assam, from Akhaura to Badarpur, was opened for traffic in 1896 and, five to seven years later, extended to Tinsukia where it joins the remotest of the early railways, the Dibru-Saidya Railway. A third outlet was provided when the branch from Lumding to Gauhati was connected up to the Eastern Bengal Railway at Amingaon on the opposite side of the river, thus establishing direct communication with Calcutta. The total length of railways in the province is a little over one thousand miles.

There are three main trunk roads in the province, *viz.*, the North Trunk Road, the Assam Trunk Road and the Cachar Trunk Road. The first of these lies on the north bank of the Brahmaputra and runs from Dhubri through the headquarters towns of Mangaldai, Tezpur and North Lakhimpur to a point on the Brahmaputra immediately opposite Dibrugarh on the south bank. The Assam Trunk Road runs from Falerganj on the south bank of the Brahmaputra through Goalpara, Gauhati, Nowgong, Jorhat and Dibrugarh to Saikhowa on the south bank opposite Saidya. The Cachar Trunk Road lies wholly in the Surma Valley and connects the two district headquarter towns of Sylhet and Cachar.

Two other important roads are those which run from Gauhati through Shillong to Cherrapunji on the south slope of the Khasi Hills, whence a

bridle path winds down to the plains of Sylhet, and the road from Dima-pur (a station on the Assam Bengal Railway) through Kohima in the Naga Hills to Manipur. This road is continued as a bridle path into Burma. These two roads are metalled throughout and are the only metalled roads of any considerable length in the province.

The total milage of the roads, including village roads and bridle paths, is 9,821 miles, of which only 579 miles are metalled. The Public Works Department is responsible for the upkeep of about three-quarters of the length of metalled roads, and for about two-fifths of the length of un-metalled roads including bridle paths and village roads; the remainder is maintained by local bodies. On account of the physical and climatic conditions, the construction and maintenance of roads is a costly business and the rate of expansion is not so rapid as it would be if more funds could be set aside for the purpose.

Trade in Assam is carried on in two different directions: firstly, the external and internal trade by rail and river, and, secondly, the trans-frontier trade with the States and tribes which border the province in the north and east. The external trade is almost all with Bengal, chiefly with Calcutta which receives about sixty per cent of the exports and supplies seventy per cent of the imports. The principal agricultural products are tea, paddy, oil-seeds, jute, cotton, potatoes and oranges. Lac, too, is important. Nearly all the paddy exported goes from the Surma Valley; on the other hand, rice is imported in considerable quantities by the tea gardens in Upper Assam. Tea is consigned straight from the gardens to Calcutta, and to an increasing extent to Chittagong also, either to be sold or shipped to other countries. A large proportion of the export trade in mustard from the Assam Valley is in the hands of a class of traders who are natives of Kamrup district; but almost all the rest of the export traffic in that region, and nearly the whole of the import traffic, is carried on by Marwari traders from Rajputana, known as *kaiyas*. In the Surma Valley, the local population contains a large trading element and the *kaiyas* are comparatively rare, but here too the foreign trader is represented in considerable force by merchants from Dacca.

The extent to which the hill tribes engage in trade varies very considerably from tract to tract. The people of the Khasi and Jaintia Hills keep much of the trade in their own hands, and merchants from among them travel as far as Dacca and Calcutta to sell their produce. Most of the tracts, however, do not produce sufficient food for the people to live on, and traffic with the plains therefore becomes a necessity. In general, it takes the form of simple barter, commodities like cotton, wax, ivory and forest produce being exchanged for rice, salt, dried fish, clothing, etc. The trans-frontier trade, too, is largely carried on by the barter of commodities such as rice, cotton cloth and yarn, silk and metals in exchange for Assamese ponies and such products as lac, spices, raw sugar, blankets and musk. All over the province there are numerous *hats*, or markets where business is done once or twice a week. The

following statement, taken from the 1921 Census Report, gives an idea of the area and population served by such rural markets :—

District	Actual number of markets	Number of markets per 100,000 of population	Average number of square miles served by a market
Goalpara	110	14	36
Kamrup	41	5	94
Darrang	57	12	51
Nowgong	43	11	86
Cachar Plains	118	24	17
Sylhet	313	15	15
Khasi and Jaintia Hills	104	43	58
Garo Hills	27	15	116

These are centres at which all the necessities and a good many of the luxuries of life can be bought and sold—grain, fish, fruits and vegetables, salt and groceries, tobacco and betel, oil and *gur*, cloth and yarn, implements and utensils, fancy and miscellaneous articles. The small cultivator's produce is brought for sale either by the cultivator himself or by the local trader who has bought in the villages. From the *hat* the surplus produce finds its way through various intermediaries to the large local consumers and to the Indian and export market. The well-to-do cultivator is generally in a position to deal directly with the larger merchants or the agents of big Calcutta firms. Agents from those firms are sent up at special seasons to buy special crops—cotton, lac, jute and mustard. Traders from Bengal come in boats and buy quantities of rice from the interior in the Surma Valley. Frequently, money is advanced against the standing crops a month or two before the harvest. An example of a *kaiya's* transaction, given in the Census Report, shows that the lender reaps a profit of 47½ per cent in three months on his money.

13. LOCAL SELF-GOVERNMENT.

The provincial Government in Assam is of the same type as obtains in other Indian provinces. The Governor acting with two Ministers administers the "transferred" departments, *viz.*, Education, Agriculture, Veterinary, Industries, Co-operative Societies, Registration, Local Self-Government, Medical Services, Public Health and Excise.

The unit of local administration is the local board. These boards are regulated by the Assam Local Self-Government Act of 1915 with subsequent amendments, of which the Act of 1926 (No. VIII) is the most important as it made the election by the board of its chairman the normal procedure and also gave the boards power to levy annual license fees on motor vehicles, carriages and carts. The boards are confined to the districts in the plains, and number nineteen in all, twelve in the Assam and seven in the Surma Valley. They are responsible for communications, vernacular education, medical and veterinary dispensaries, sanitation and water supplies.

The Local Self-Government Act of 1915 provided for the setting up of village authorities. By the end of 1927, 239 such authorities had been established. In 1926, the Assam Rural Self-Government Act (No. VII) was passed. This Act, which extends to the whole of Assam, enlarged the powers conferred on the village authorities by the Act of 1915. This Act will probably be brought into force in the course of 1928. Under it an authority may be constituted for a village or a group of villages; it will consist of such number of members not exceeding nine as the local Government may fix in each case; all members are to be elected; the electorate will consist of all male persons over twenty-five years of age and resident in the village; every one qualified to be an elector will also be qualified to stand for election as a member of the village authority. The primary responsibilities of the authorities are communications, sanitation, water supply and medical relief. The local Government may also transfer to approved authorities, under certain conditions, the management of village forests. A Village Development Fund, financed chiefly from provincial revenues, will be created for the whole of Assam. A contribution may be made from the fund to the expenses of each village authority which are also met in part by a contribution from the local board of the area and by the proceeds of penalties, fines and fees. The Act of 1926 empowers a village authority to raise money by imposing an assessment on the village.

Under the same Act, village benches may be set up for the trial of minor criminal offences and village courts for the trial of minor civil offences. Both bench and court consist of three or more residents within a village area who may or may not be members of the village authority. A complete scheme of village self-government has thus been provided. Up to the end of 1927, 239 village authorities and 92 village benches and courts had already been constituted under the provisions of the earlier Act of 1915. They are all situated in the Assam and Surma valleys.

14. PUBLIC HEALTH AND SANITATION.

The medical institutions in the province are under the control of the Inspector General of Civil Hospitals. His staff consists of nine civil surgeons belonging to the Indian Medical Service, each of whom is in charge of a district; the remaining districts are in the charge of military or civil assistant surgeons. Including the institutions directly under the Public Health Department, the total number of institutions for the treatment of disease numbered 237 in 1926, and at these over a million-and-a-half of patients received treatment.

The Public Health Department is administered by a Director who is a member of the Indian Medical Service, assisted by an Assistant Director. The staff consists of a vaccination inspector for each district and a sub-inspector in each subdivision if the district is divided into subdivisions. In addition, there are two mobile units specially trained for epidemic duties, each consisting of three sub-assistant surgeons and six disinfectant carriers, and there is a special organisation for dealing with *kala-azar*, consisting of six assistant surgeons and 113 sub-assistant surgeons.

The Public Health Laboratory undertakes the analysis of water and food samples brought for examination by a peripatetic sample taker. Vaccine lymph is made at the provincial vaccine dépôt at Shillong.

General public health projects affecting the province are considered by the Provincial Public Health Board. For the control of epidemics, there is a special Health Board (Epidemics) which co-ordinates the activities of the Public Health and Medical departments.

Most of the time of the Assistant Director is devoted to epidemic duties including *kala-azar*. The inspectors and sub-inspectors inspect the work of the large staff of vaccinators employed by local boards, and of government vaccinators in the hill districts, under the general supervision of the district surgeons. The epidemic units, or sections of them, are sent out to deal with outbreaks as occasion arises, sometimes under the personal supervision of the Assistant Director. In districts in which *kala-azar* infection is heaviest, the special *kala-azar* organisation supplements the efforts of the government and local board dispensaries, and maintains special institutions of its own, when necessary, where no others exist. Each of the six special assistant surgeons has been posted to an infected district and does all the *kala-azar* work of that district under the civil surgeon, besides helping with any other epidemic that may arise as well as public health propaganda.

Some idea of the immensity of the public health problem can be gathered from the figures of the number of patients treated in 1925-26, just quoted, which was of the order of about one in every five of the population. Housing, rural water supply and sanitary arrangements leave much to be desired and most of the ills which afflict the ryots in other provinces are present here also, plague being a notable exception and *kala-azar* perhaps a still more notable addition. Assam is indeed the home of *kala-azar* and has probably suffered from it to an extent unknown in any other country in the world. The first epidemic concerning which information is available occurred in 1881; in the succeeding decade, it exacted a terrible toll of human life, leaving whole tracts deserted and uncultivated. Between 1891 and 1901, the population of Kamrup decreased by seven per cent and in Nowgong by more than one-fourth. From that time a period of quiescence intervened although the disease lingered on in endemic form in certain areas. In 1920, a general recrudescence occurred in those areas, together with a tendency for the disease to spread further afield. Providentially for Assam, medical science has discovered an effective treatment and though there has been an increase in the number of deaths, particularly between 1922 and 1925, there are indications that the disease is now under control and that its further spread has been arrested. Over 60,000 cases were treated in 1925, the mortality in the same year being 6,365. Twenty years ago practically all of the 60,000 would have been doomed to death.

Next to *kala-azar*, malaria is probably the most potent enemy to human life. In a few localities, special anti-malarial measures, such as the clearance of jungles and undergrowths, the improvement of drainage and the treating of sheets of water with kerosine are being carried out.

by Government and by tea companies. Quinine is sold, below cost price, through the post offices and other agencies, at the rate of $4\frac{1}{2}$ annas per 20 tablets of 4 grains each. Enclosed with the treatment is a printed copy of instructions to enable the patient to treat himself.

The organisation for dealing with small-pox has succeeded in bringing the mortality due to that disease to a very low figure. The staff of vaccinators maintained by the local boards is sufficiently strong to permit of each village being visited during the vaccination season from October to March. Vaccination is not compulsory, but sometimes it is necessary to introduce temporary regulations making it compulsory in villages in which there is opposition to vaccination and small-pox is prevalent. Cholera inoculation has come rapidly into favour since the two epidemic units started work in 1925.

A considerable amount of propaganda work is carried out among the general public and in schools by the *kala-azar* assistant surgeons. Lantern demonstrations are given dealing with the prevalent epidemic diseases; bulletins and pamphlets are issued and pictorial posters are freely displayed in public places.

The local boards are responsible for village sanitation, watersupply, conservancy and drainage, and have their own staff of engineers for drawing up schemes. In some cases, the boards have delegated certain powers to local *panchayats* or 'village authorities' which control groups of villages. Government placed at the disposal of local boards a sum of Rs. 3 lakhs in each of the years 1925-26 and 1926-27, and of Rs. 4 lakhs in 1927-28, to be used entirely at the boards' discretion for the improvement of rural watersupplies.